




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/701,246 | 11/04/2003 | Ming Yeh | 7268U-240CPA | 6090 |
| 2292 | 7590 | 10/27/2005 | EXAMINER | |
| BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | MAI, ANH T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2832 | |

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/701,246 | Applicant(s) YEH ET AL.  | |
| | Examiner Anh T. Mai | Art Unit 2832 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 5-8, 10, 12, 14-15, 17, 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dadafshar [6420953] in view of Holl et al. [2002/0148640A1].

Dadafshar discloses a metal core 120 of two E-sectional cores; coil component 100 of one or more turns spiral conductor of layers, each coil module having a predetermined loop number of coil traces (strips) 204, 224, 264, 284 [figure 2] and can be connected to serve as primary winding and secondary winding; PCB 130 encapsulates the coils [figure 1B; col 2, lns 53-55].

Dadafshar does not disclose the substrate having plastic.

Holl however, discloses a wide array of substrates wherein ceramic (heat conductive material) and mixing with other powders including thermoplastic [paragraph 0033].

Because Dadafshar and Holl are both from the same field of endeavor, the material of substrate having plastic and ceramic as disclosed by Holl would have been recognized as pertinent art of Dadafshar.

It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to construct a substrate, as disclosed by Dadafshar, with material of

Art Unit: 2832

plastic and ceramic, as disclosed by Holl for the purpose of providing sufficient adhesive properties of such materials to produce electronic substrates [paragraph 0034].

With respect to claims 7-8, 17, ceramic is known as heat conductive material.

With respect to claim 5, the coils are arranged in stack of coil [figure 2].

With respect to claims 6 and 15, the coils are connected in series [col 2; lns 31-35].

With respect to claims 20-21, the claims are method counterpart of structure claim 1.

With respect to claim 22, the claim is method counterpart of structure claim 5.

With respect to claims 24-27, the claims are method counterpart of structure claim 3 and methods steps therefore inherent for manufacturing a transformer comprising windings being encapsulated in the multilayer substrate.

3. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dadafshar in view of Holl as applied in claims 1 and 10 above, and further in view of FUSHIMI.

Dadafshar in view of Holl discloses the claimed invention except for the coils being substantially in the same plane. Fushimi, however, discloses primary winding 701 and secondary 601 wound on side legs 103 of the core [fig. 1].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to arrange the windings as taught by Fushimi to the coil structure as disclosed by Dadafshar in view of Holl. The motivation would have been to decrease the height dimension and reduce the thickness [col 3; lns 20-22].

4. Claims 2, 9, 11, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dadafshar in view of Holl et al. as applied in claims 1 and 10 above, and further in view of Smith.

Dadafshar in view of Holl discloses the claimed invention except for the coils of the module are of wound portion of at least conductive wire and plurality of conductive wires in one coil module and the coils of these conductive wires are separated by encapsulator.

Smith, however, discloses in figure 3b, the coils are wound portion of conductive wire 114 and coil module and conductive wires are separated by encapsulator 112 of figure 3B [col 2, lns 28-32].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encapsulate the windings as taught by Smith to the coil structure as disclosed by Dadafshar in view of Holl. The motivation would have been improve isolation between the primary and secondary windings and to reduce losses in the transformer [col 2; lns 50-55].

With respect to claim 23, the claim is method counterpart of structure claim 2.

Response to Arguments


5. Applicant's arguments with respect to claims 1-15, 17-27 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh T. Mai whose telephone number is 571-272-1995. The examiner can normally be reached on 5/4/9 Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2832

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**ANH MAI
PRIMARY EXAMINER**